

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 10671 - L2 Version 2
Chandra X-Ray Center

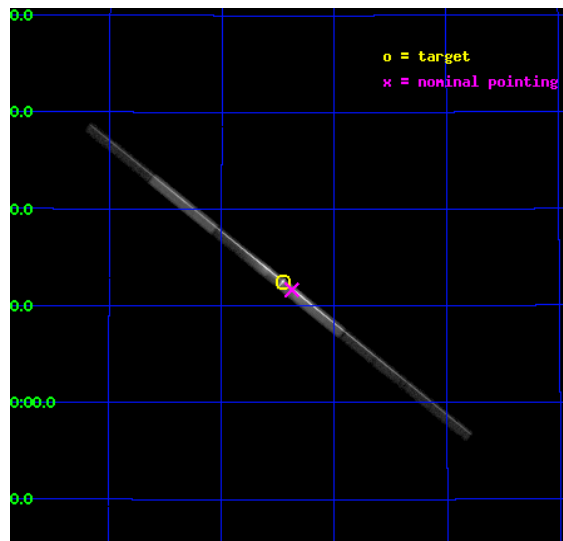
L2 Processing Date : Jun 18 2012

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1 Front

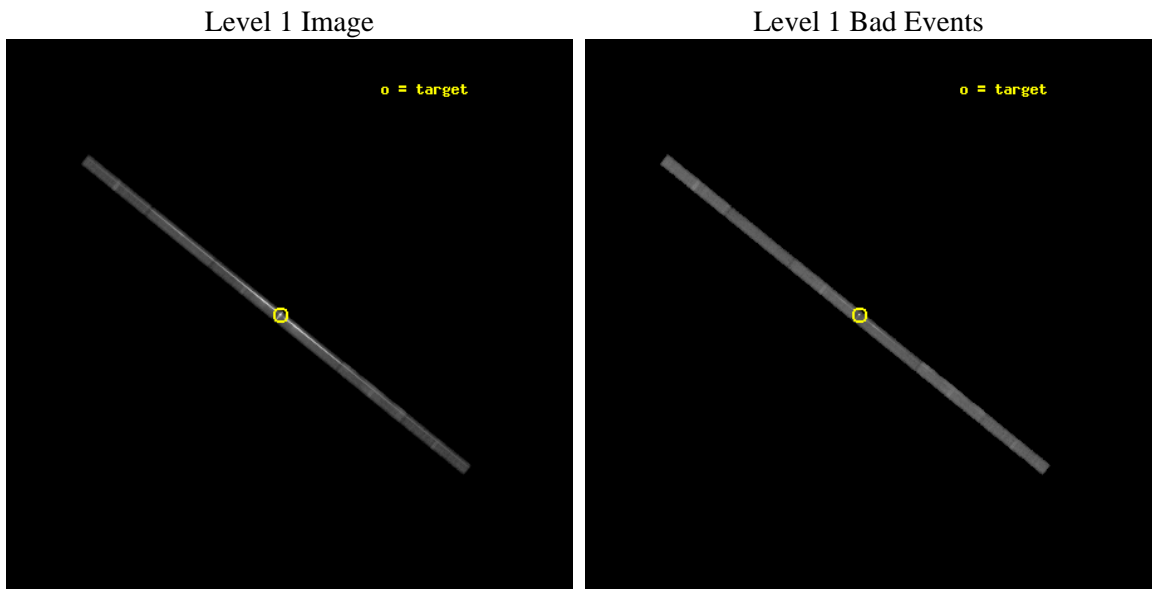
seq_num	790208	Sequence number
obs_id	10671	Observation id
title	AO-10 Calibration Observation of PKS2155-304 Near the Read-Out	Pro
observer	Dr. CXC Calibration	Principal investigator
object	Mkn421	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	166.1133	Observer's specified target RA [deg]
dec_targ	38.2088	Observer's specified target Dec [deg]
ra_nom	166.09381287191	Nominal RA [deg]
dec_nom	38.19451029732	Nominal Dec [deg]
roll_nom	38.757620752264	Nominal Roll [deg]
revision	2	Processing version of data
ontime	28959.601150751	Sum of GTIs [s]
liveltime	27105.579512122	Livetime [s]
ontime4	28959.601150751	Sum of GTIs [s]
ontime5	28959.601150751	Sum of GTIs [s]
ontime6	28959.601150751	Sum of GTIs [s]
ontime7	28959.601150751	Sum of GTIs [s]
ontime8	28959.601150751	Sum of GTIs [s]
ontime9	28959.601150751	Sum of GTIs [s]
l2events	813845	Number of level 2 events



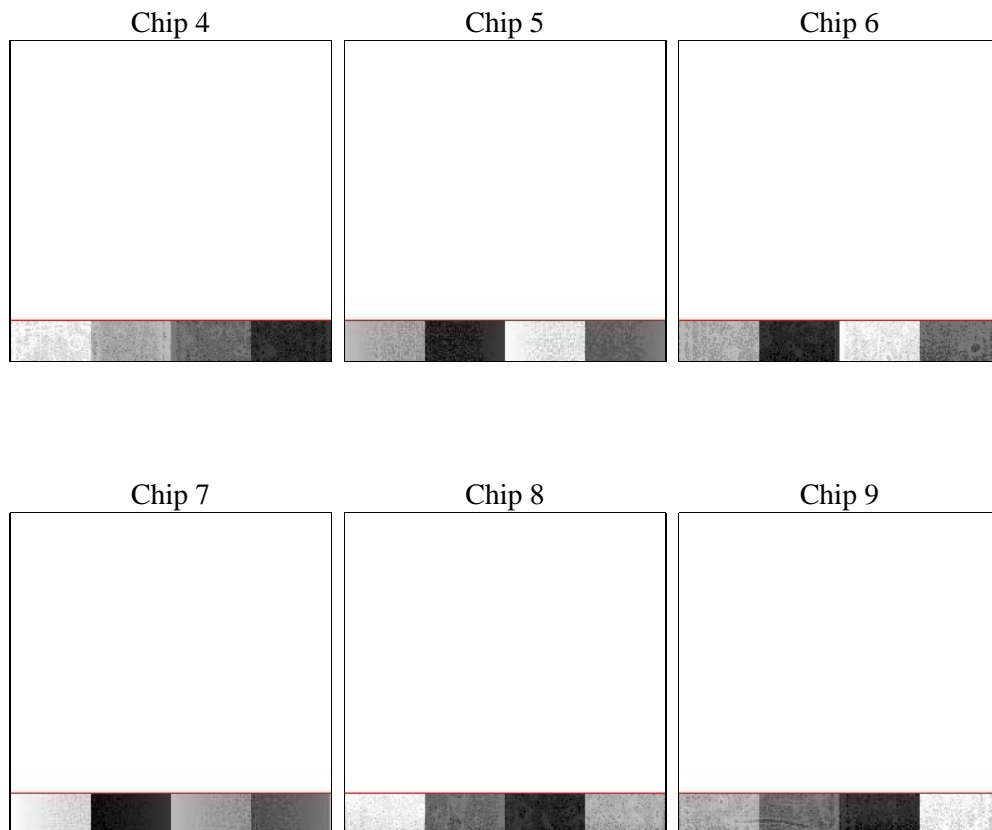
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	28809.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	28959.601150751	Sum of GTIs [s]
caldbver	4.4.10	 	ontime4	28959.601150751	Sum of GTIs [s]
date	2012-06-15T13:06:28	Date and time of file creation	ontime5	28959.601150751	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	28959.601150751	Sum of GTIs [s]
			ontime7	28959.601150751	Sum of GTIs [s]
			ontime8	28959.601150751	Sum of GTIs [s]
			ontime9	28959.601150751	Sum of GTIs [s]
			l1events	1167183	Number of level 1 events

2.1.4 Events

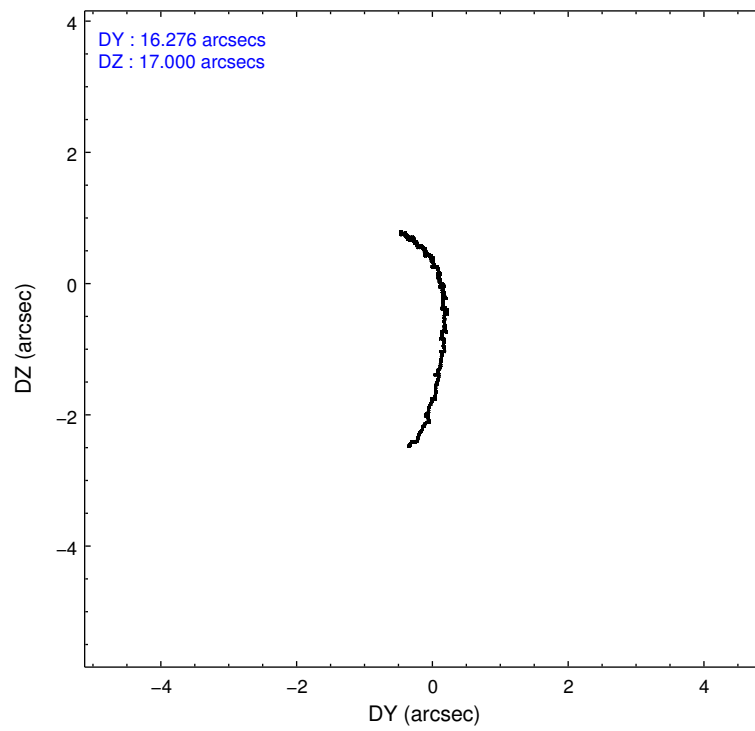
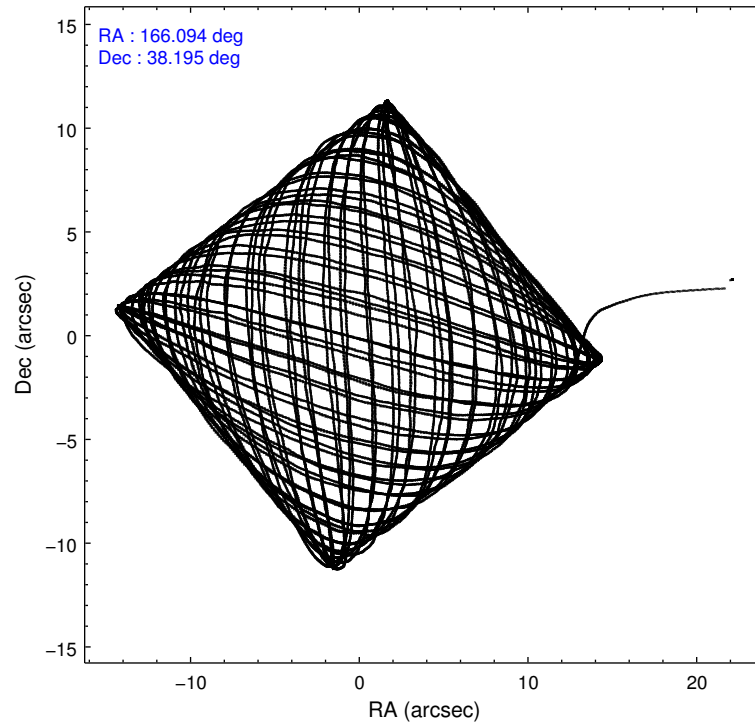
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	65577	106336	322559	525659	93171	53881
rejected events	51531	34365	49838	87248	56317	40373
rejected %	78%	32%	15%	16%	60%	74%

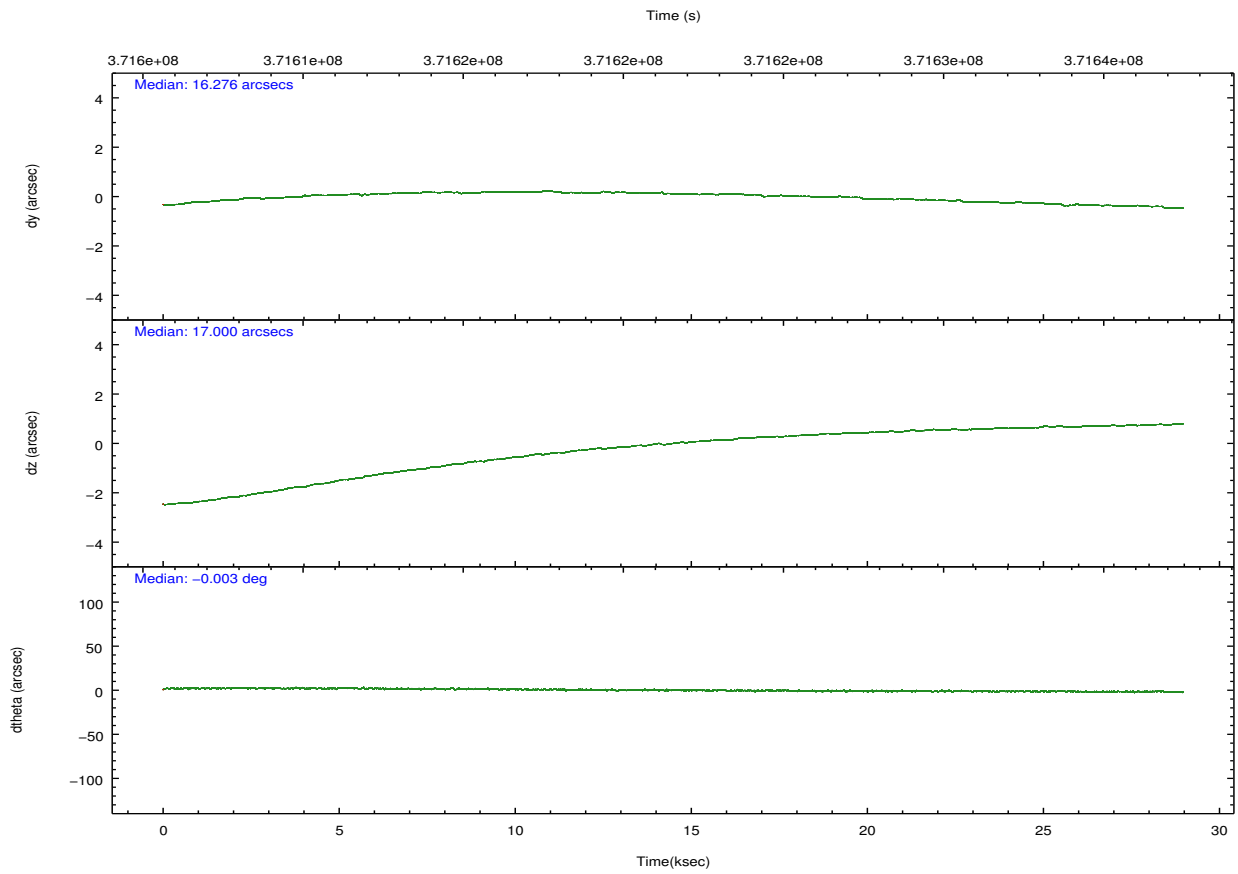
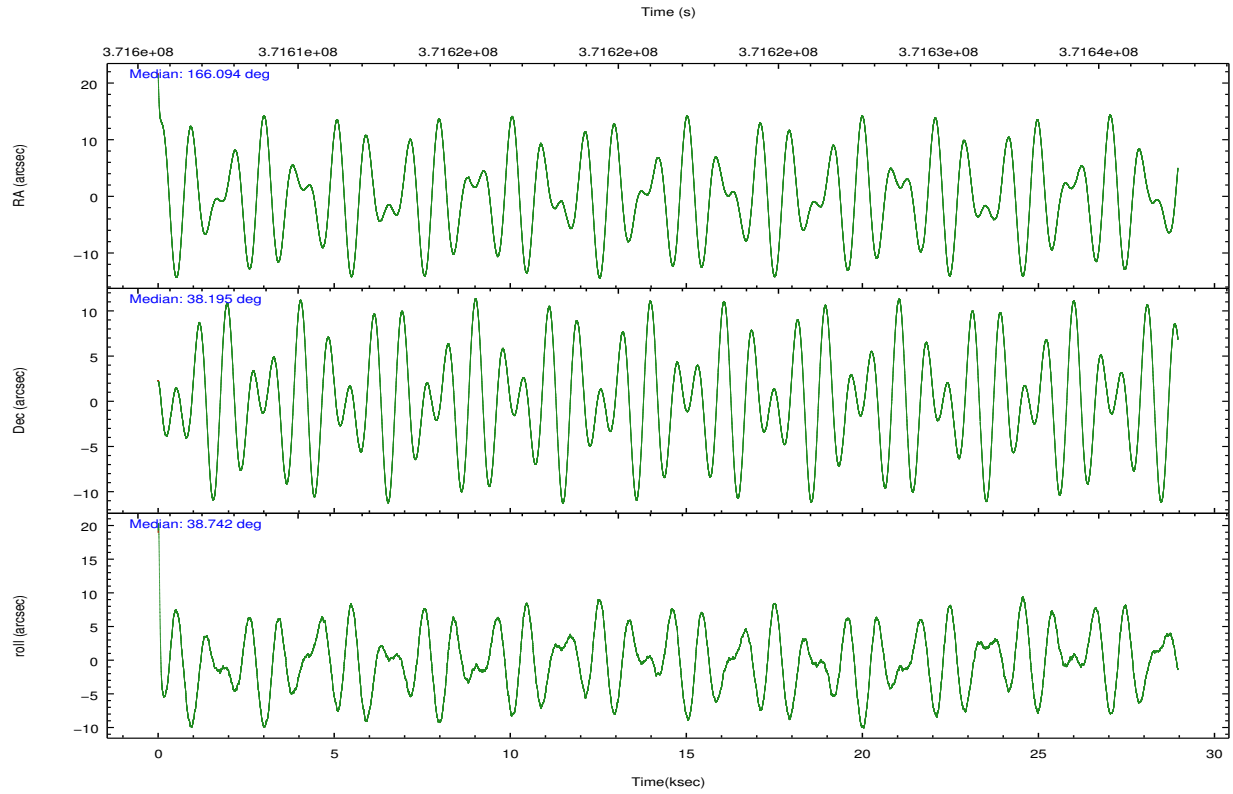
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	8463	26119	214137	100478	21551	8480
	12%	24%	66%	19%	23%	15%
grade 1 events	19	101	1332	1904	61	19
	0%	0%	0%	0%	0%	0%
grade 2 events	2159	16528	29660	110615	5198	1742
	3%	15%	9%	21%	5%	3%
grade 3 events	1222	5767	10313	50952	2685	1157
	1%	5%	3%	9%	2%	2%
grade 4 events	1144	5738	10520	50764	2453	1116
	1%	5%	3%	9%	2%	2%
grade 5 events	1786	5772	2746	14301	2471	1832
	2%	5%	0%	2%	2%	3%
grade 6 events	1208	18504	8812	127191	5239	1130
	1%	17%	2%	24%	5%	2%
grade 7 events	49576	27807	45039	69454	53513	38405
	75%	26%	13%	13%	57%	71%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-456789	ACIS-456789	Obspar file type	PREDICTED	ACTUAL
Grating	LETG	LETG	Obspar update status	NONE	UPDATED
Data mode	FAINT	FAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	166.081657	166.0938128719095	CCD I2 on	N	N
[deg] Pointing Dec	38.168898	38.19451029732017	CCD I3 on	N	N
[deg] Pointing Roll	38.608503	38.75762075226359	CCD S0 on	O1	Y
[s] Window start time (MET)	370742466.184000	370742466.184000	CCD S1 on	Y	Y
[s] Window stop time (MET)	378604866.184000	378604866.184000	CCD S2 on	Y	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S3 on	Y	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S4 on	Y	Y
[mm] SIM translation stage pos	-179.132523	-179.1424509208485	CCD S5 on	Y	Y
[mm] SIM translation stage offset	-11	-10.99007166215935	Number of optional ACIS chips dropped	0	0
[s] Observation start time (MET)	371607226.184000	371606097.49189	On-chip summing requested	N	N
Observation start date	2009-10-11T00:12:40	2009-10-10T23:54:57	Subarray requested	CUSTOM	1/8
[s] Observation end time (MET)	371636035.184000	371637018.15595	Subarray start row	1	1
Observation end date	2009-10-11T08:12:49	2009-10-11T08:30:18	Subarray row count	128	128
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	0.6

2.3 Aspect



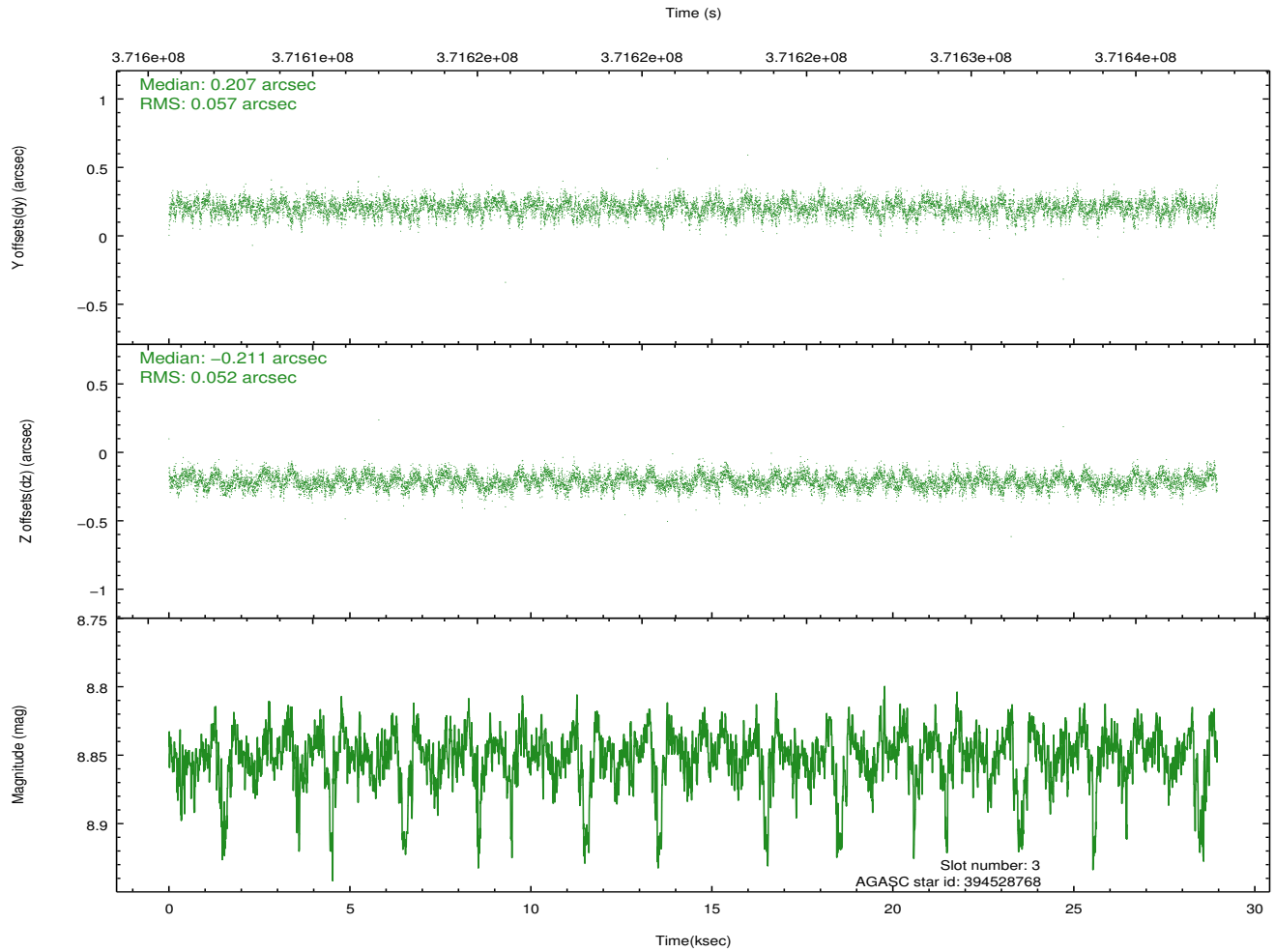
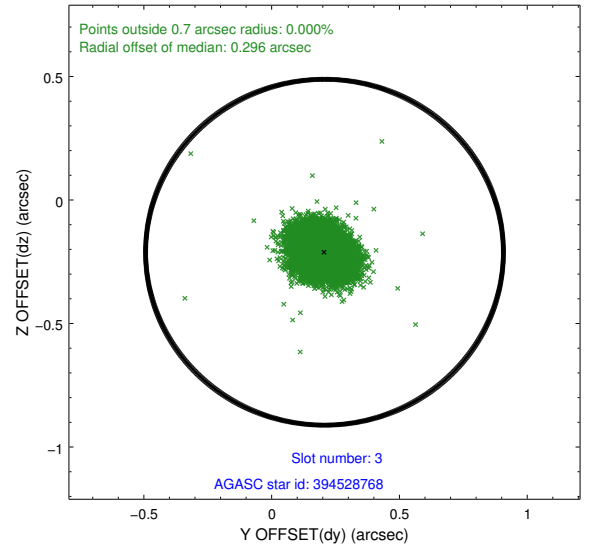
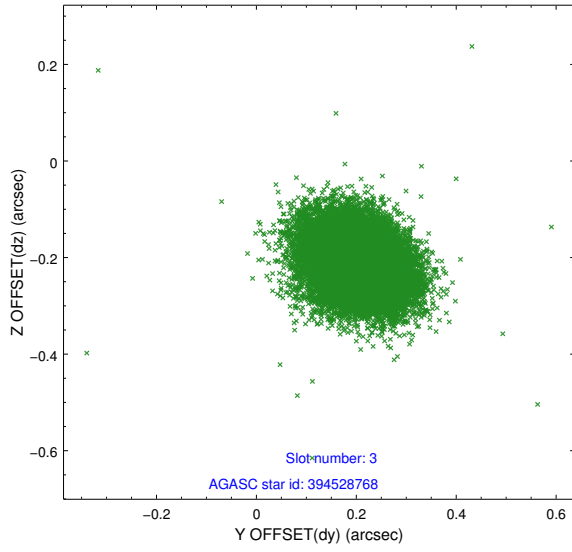


Slot Statistics

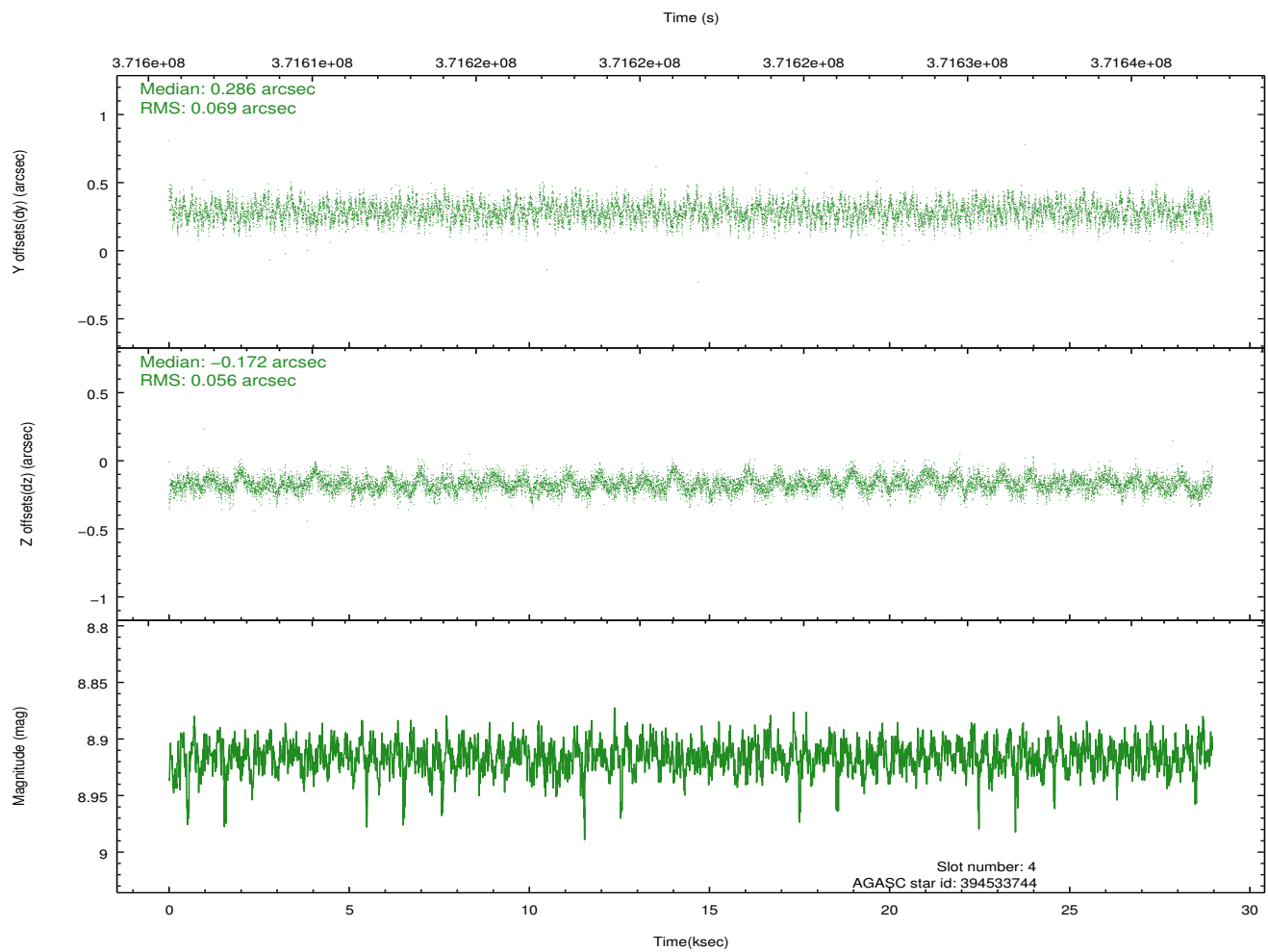
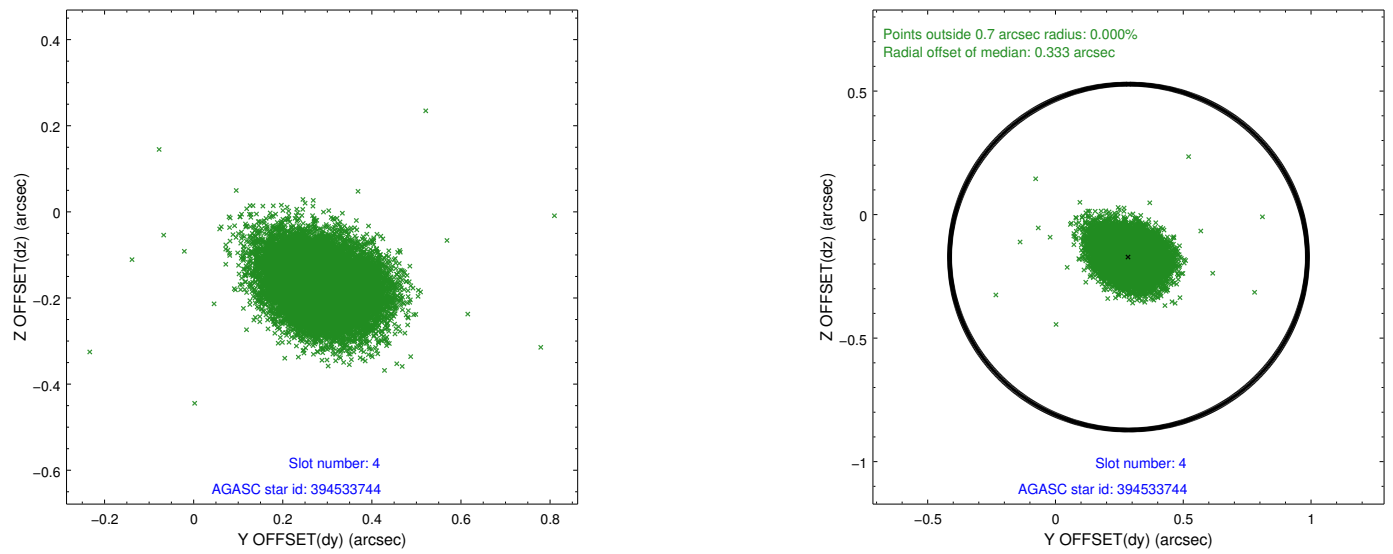
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	6.97	7063	0.148	0.078	0.013	0.023	0.000000	0.000000	927.67	-1959.95
1	FID	ACIS-S-5	7.03	7064	-0.171	0.151	0.013	0.024	0.000000	0.000000	-1821.51	-62.32
2	FID	ACIS-S-6	7.19	7064	0.000	-0.218	0.019	0.030	0.000000	0.000000	393.11	581.25
3	GUIDE	394528768	8.85	14120	0.207	-0.211	0.082	0.132	166.180365	38.952248	1975.59	2031.37
4	GUIDE	394533744	8.92	14119	0.286	-0.172	0.094	0.151	167.094985	37.988717	1853.14	-2288.54
5	GUIDE	394533848	8.72	14113	0.139	0.124	0.083	0.134	166.382906	38.276007	905.20	-226.47
6	GUIDE	394546720	6.40	14128	-0.496	0.296	0.086	0.145	166.130115	38.241361	269.73	118.39
7	GUIDE	394530152	7.49	14122	-0.141	-0.042	0.089	0.138	166.075805	38.868252	1557.89	1977.72

2.4 Star Slots

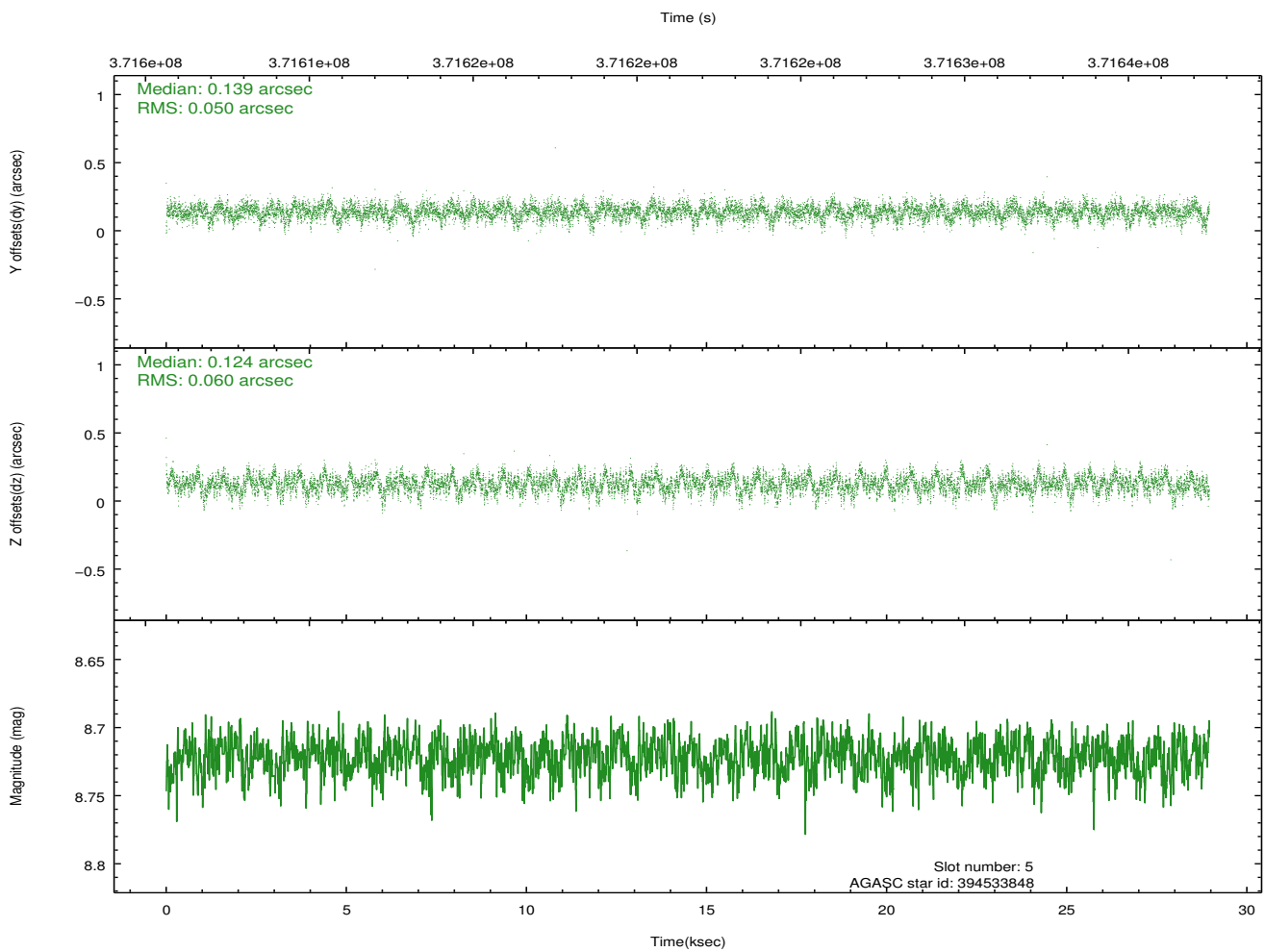
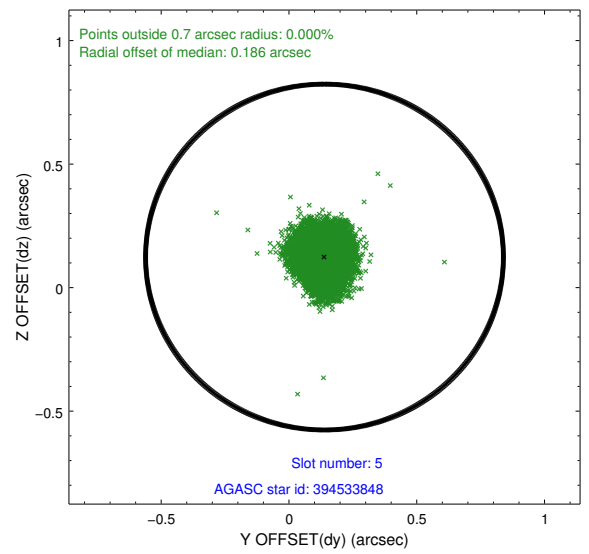
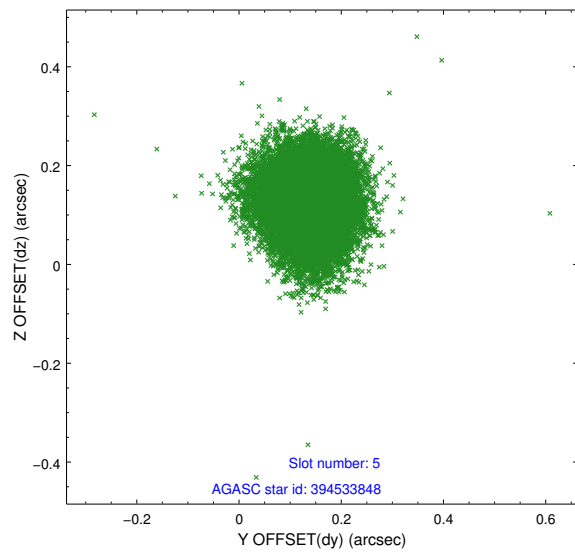
2.4.1 Slot 3



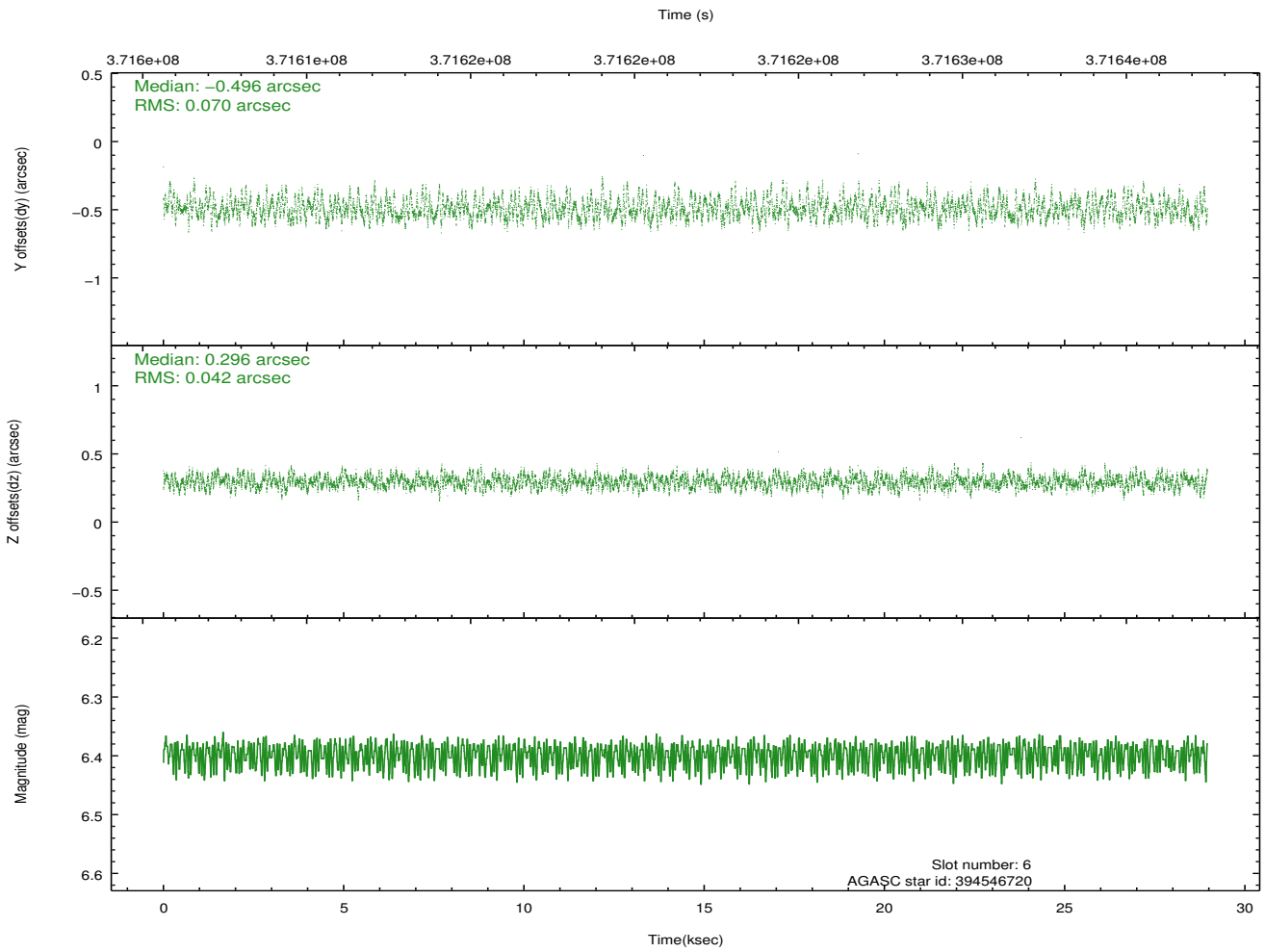
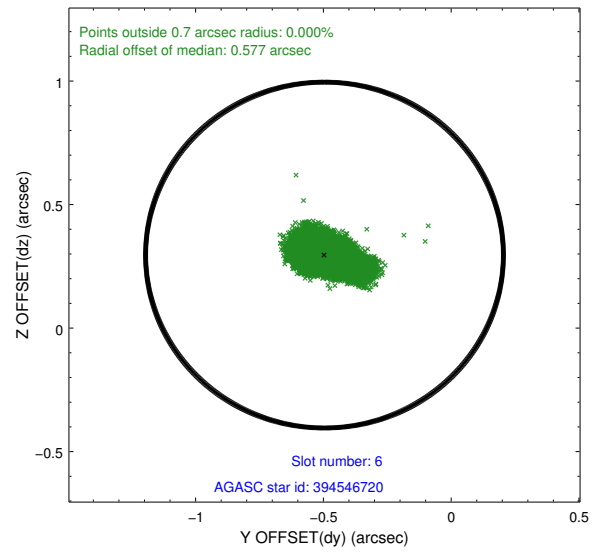
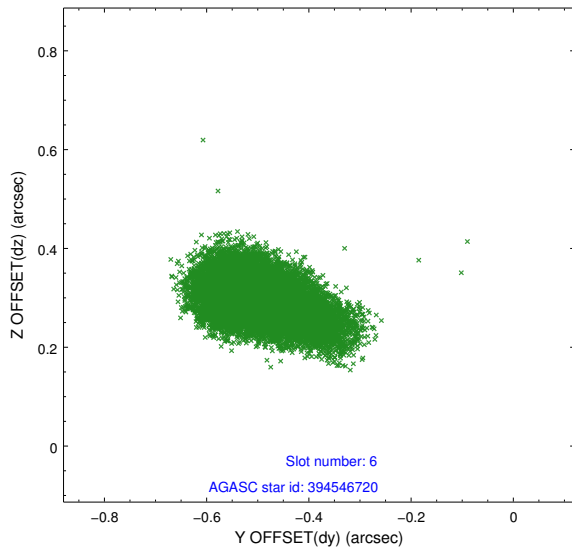
2.4.2 Slot 4



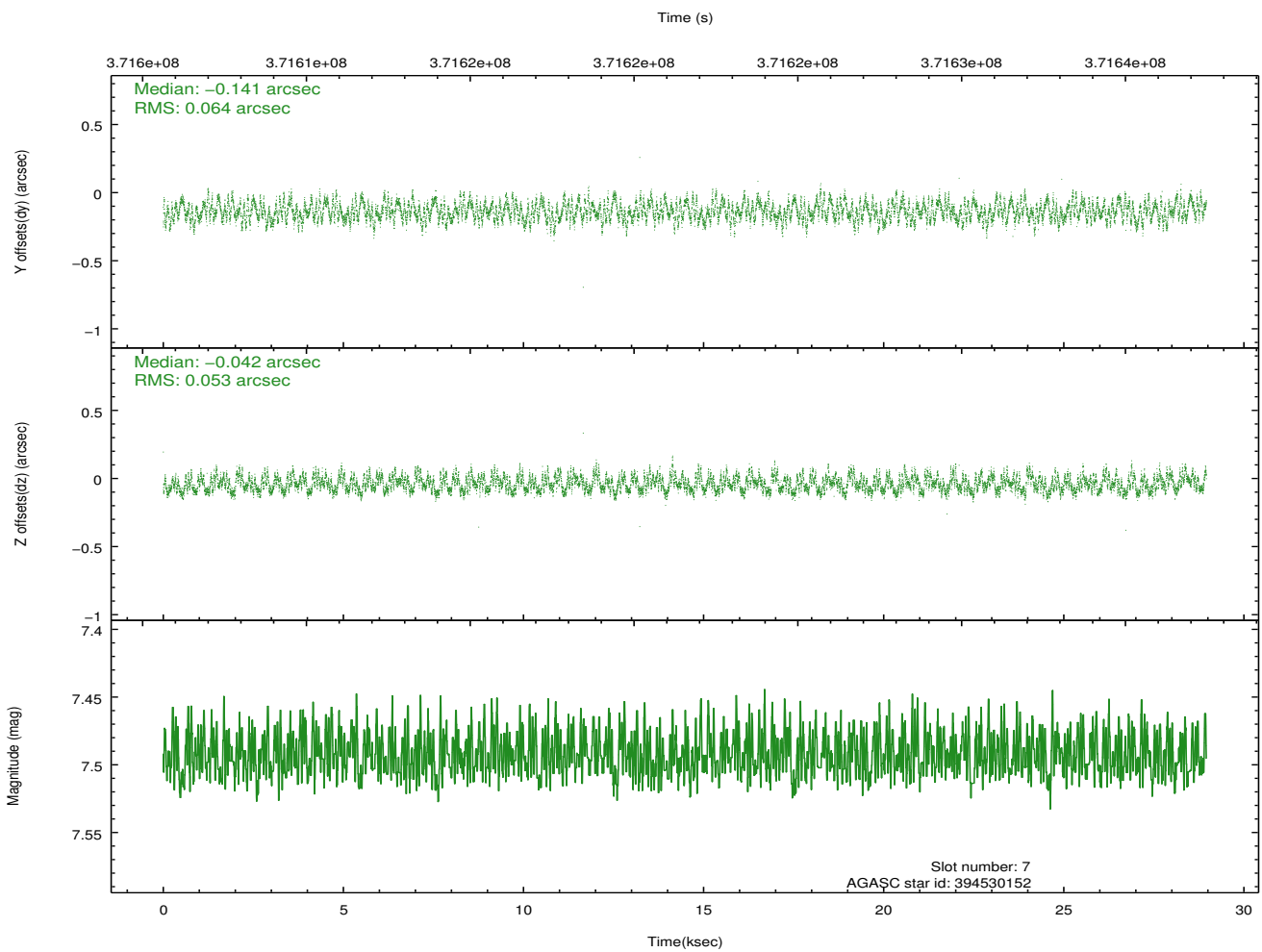
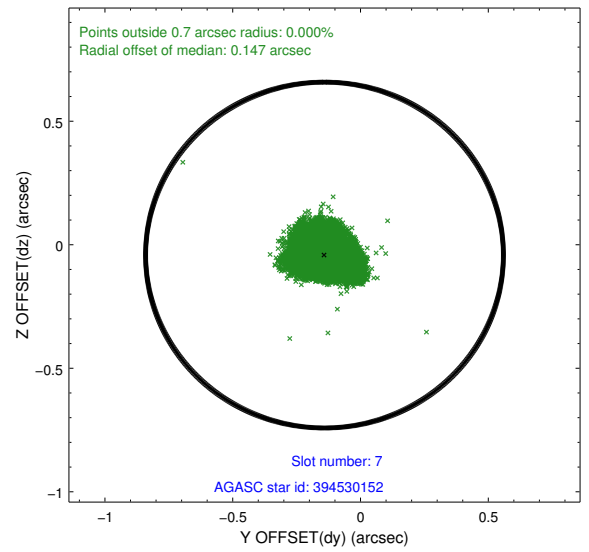
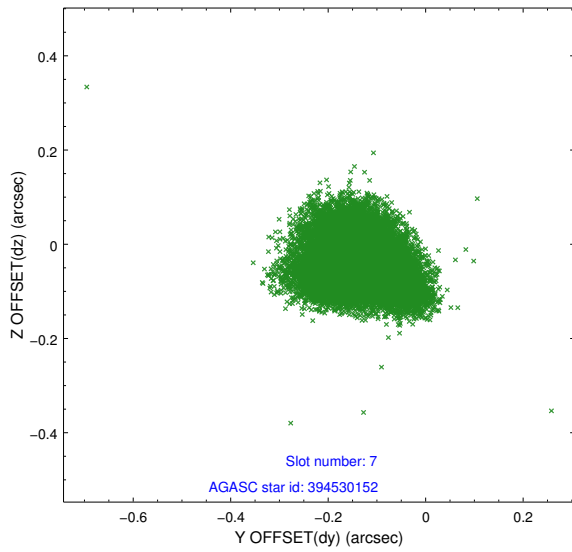
2.4.3 Slot 5



2.4.4 Slot 6

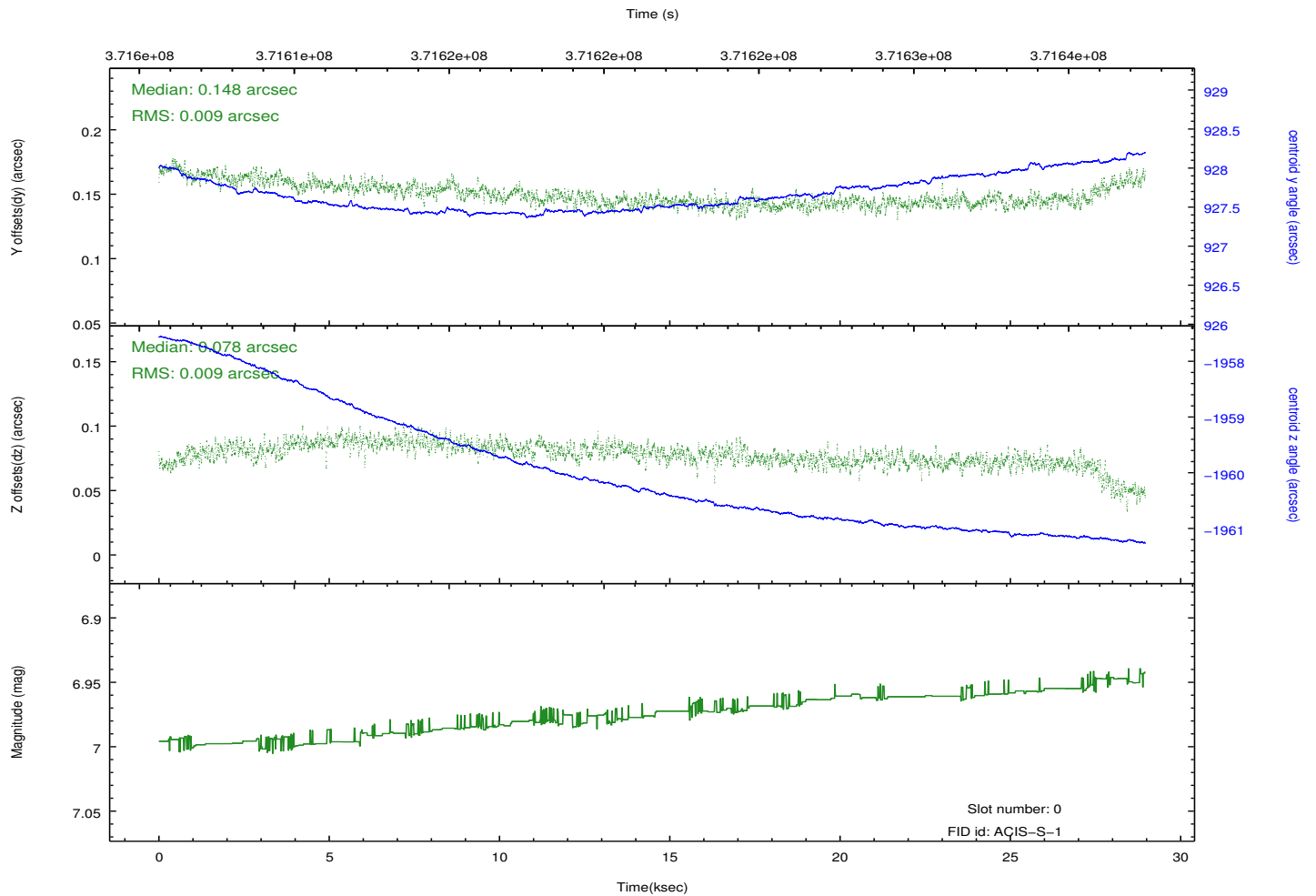
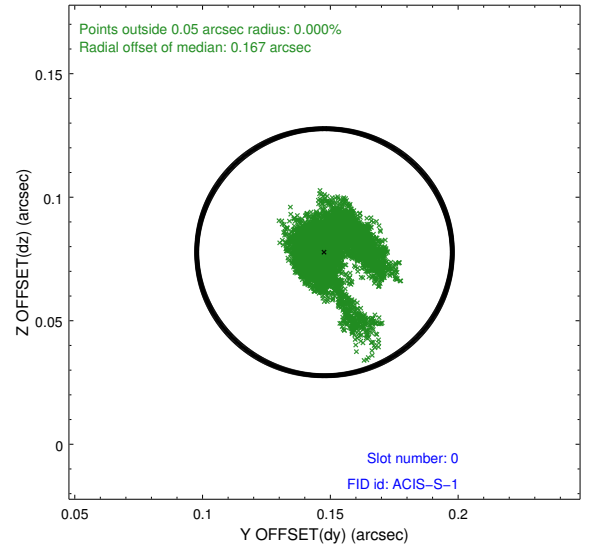
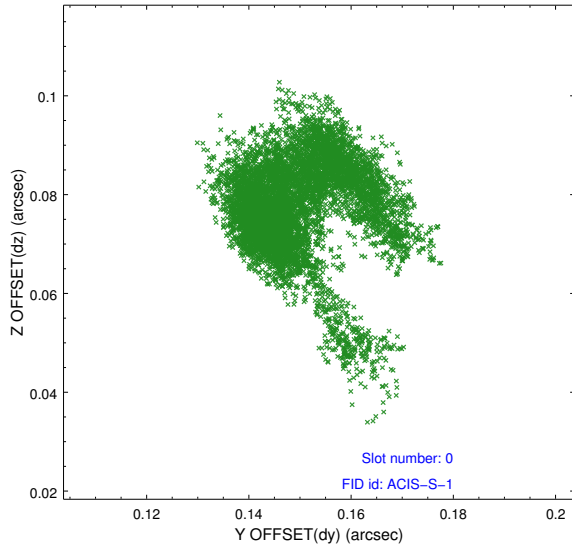


2.4.5 Slot 7

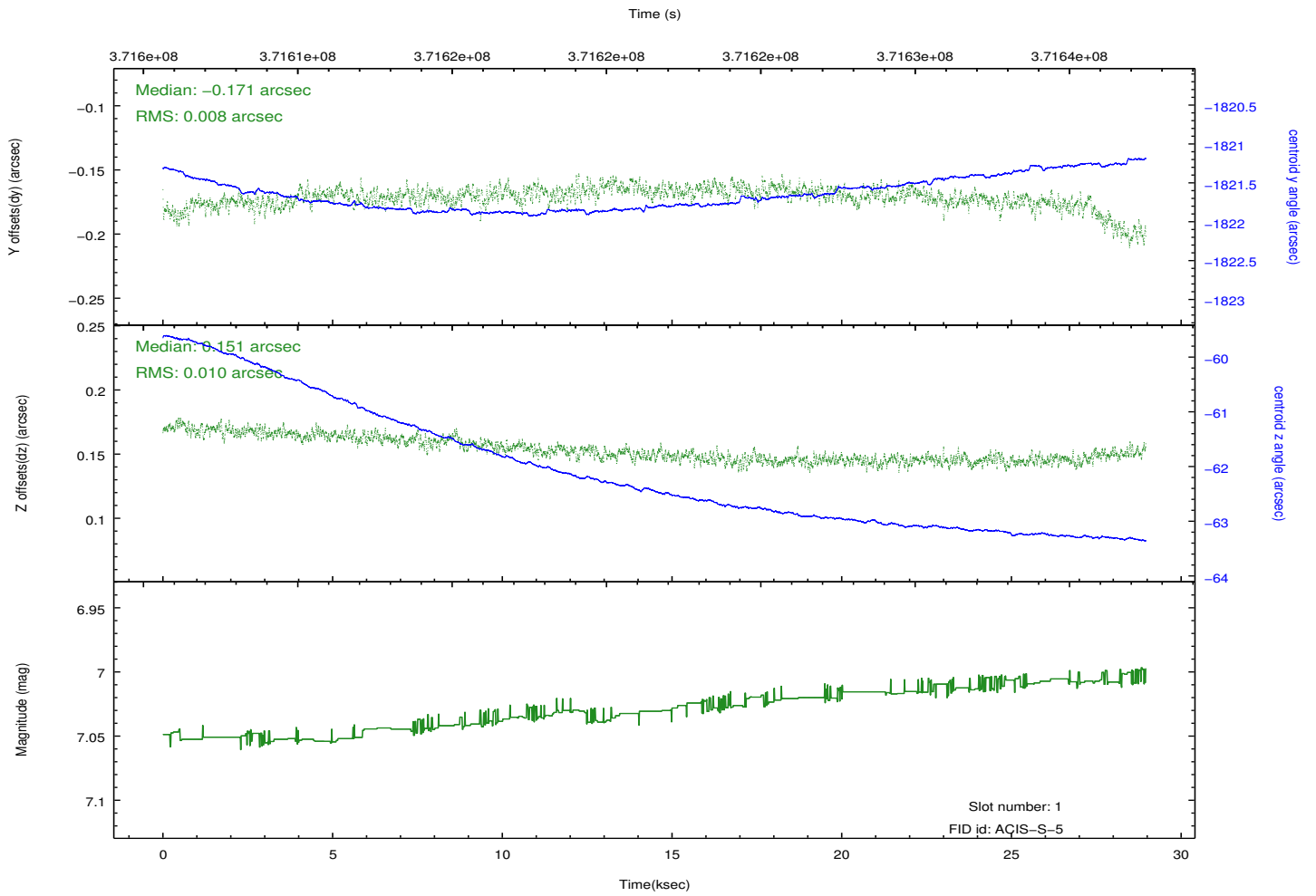
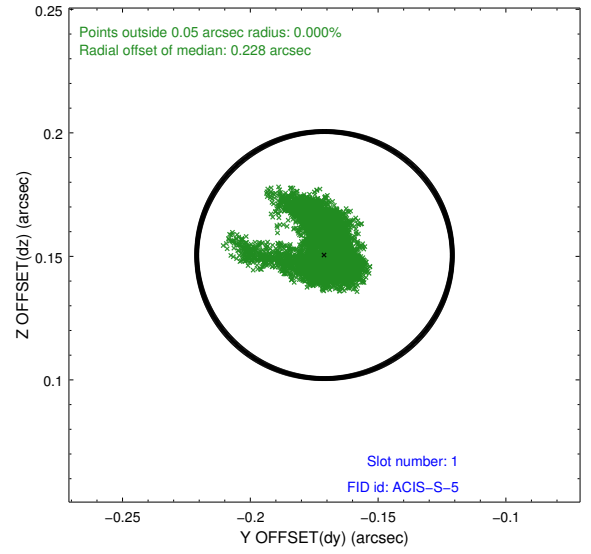
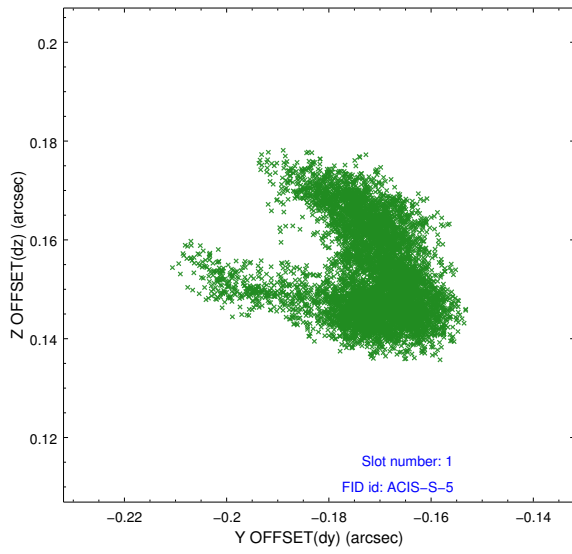


2.5 FID Slots

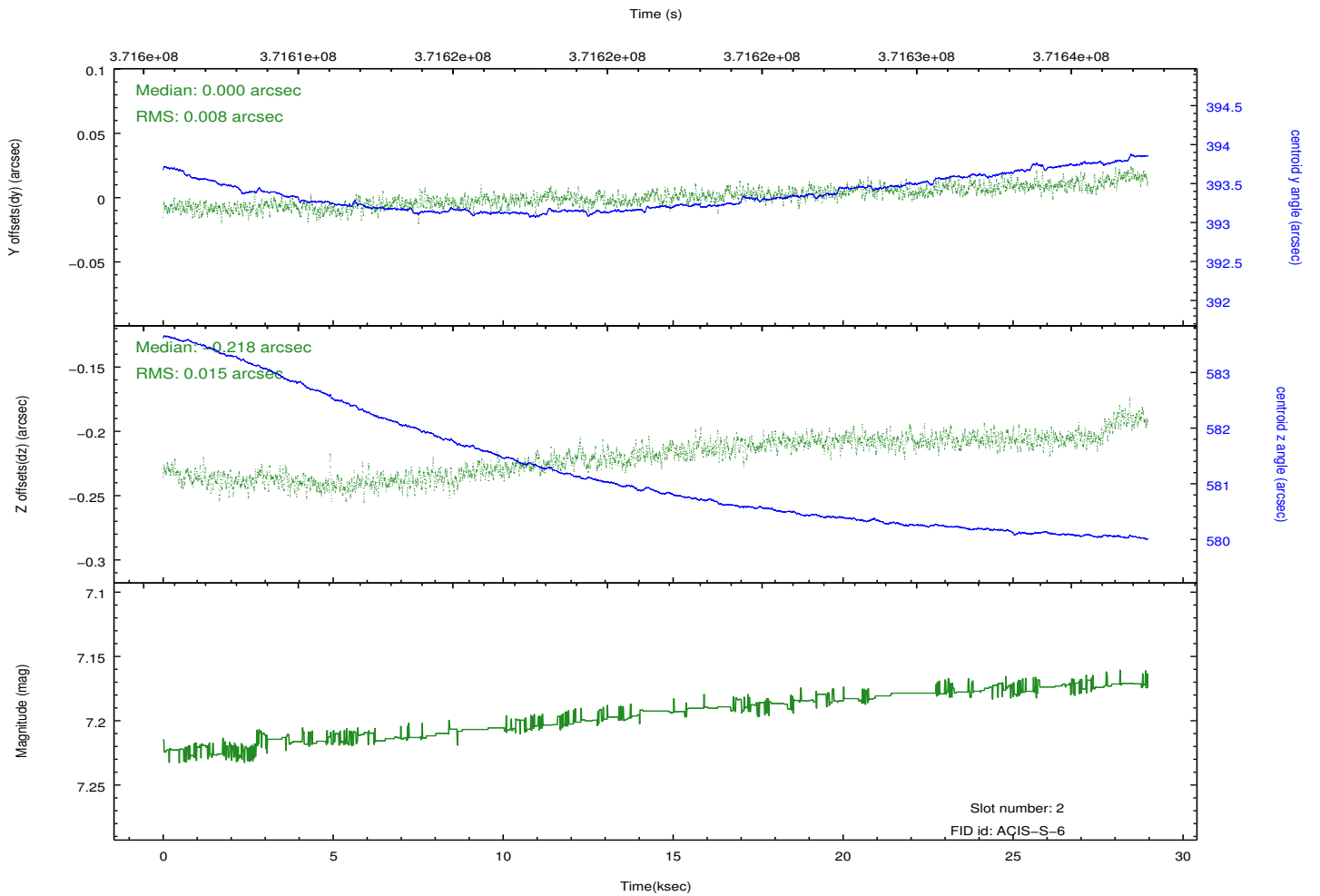
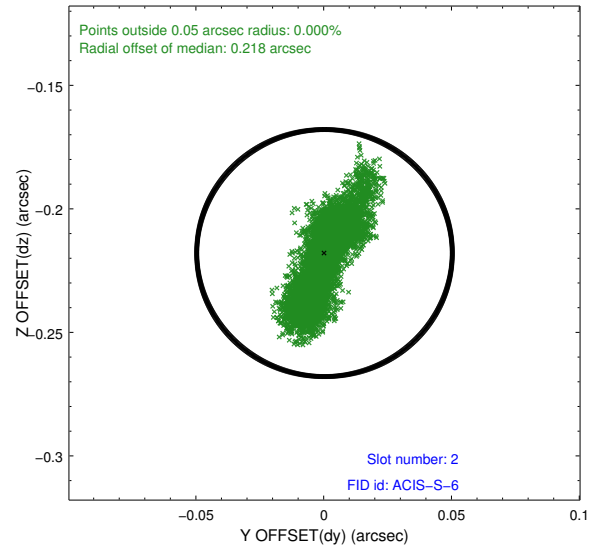
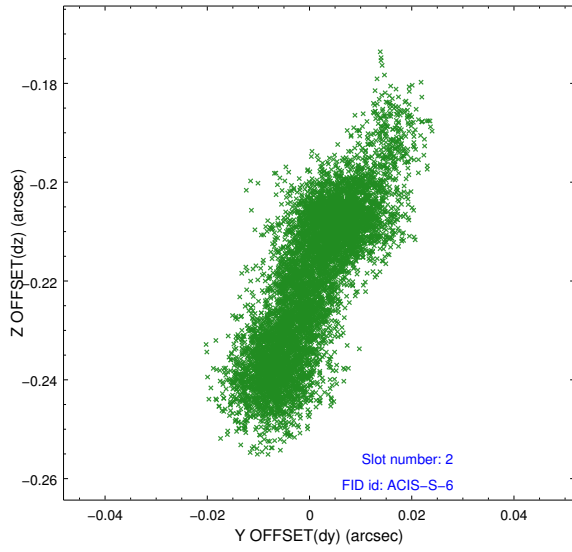
2.5.1 Slot 0



2.5.2 Slot 1

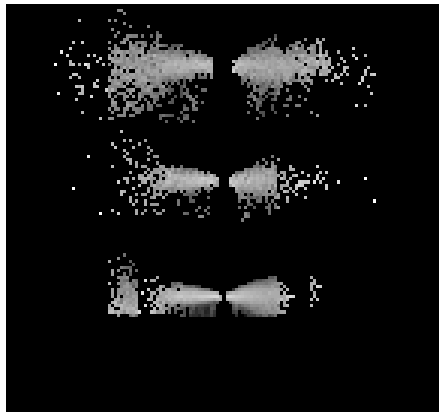


2.5.3 Slot 2

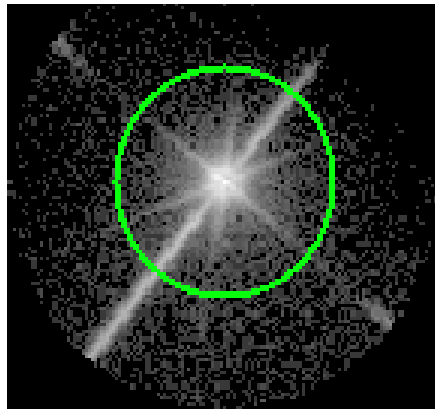


3 Gratings

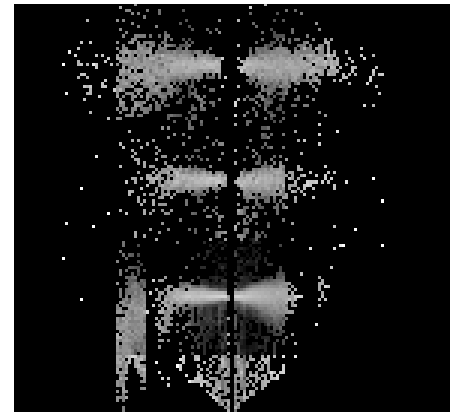
3.1 LETG Arm



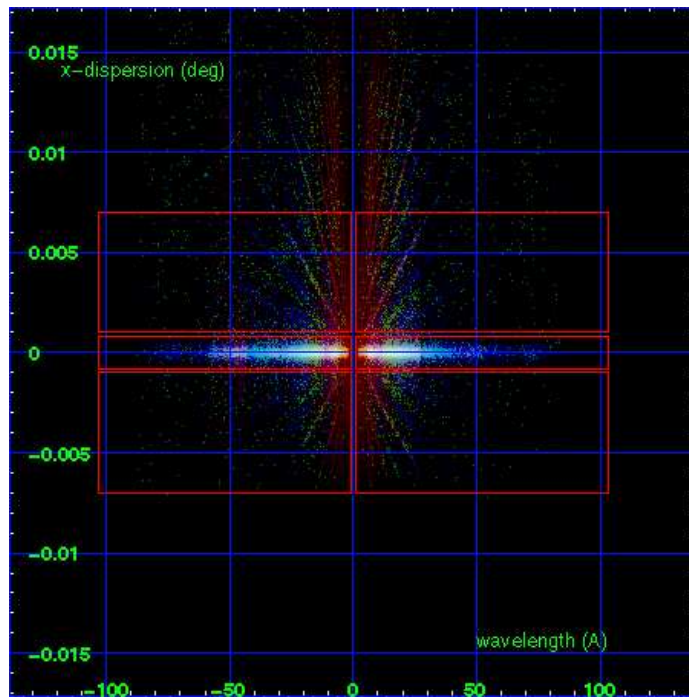
LETG Order Sort 123



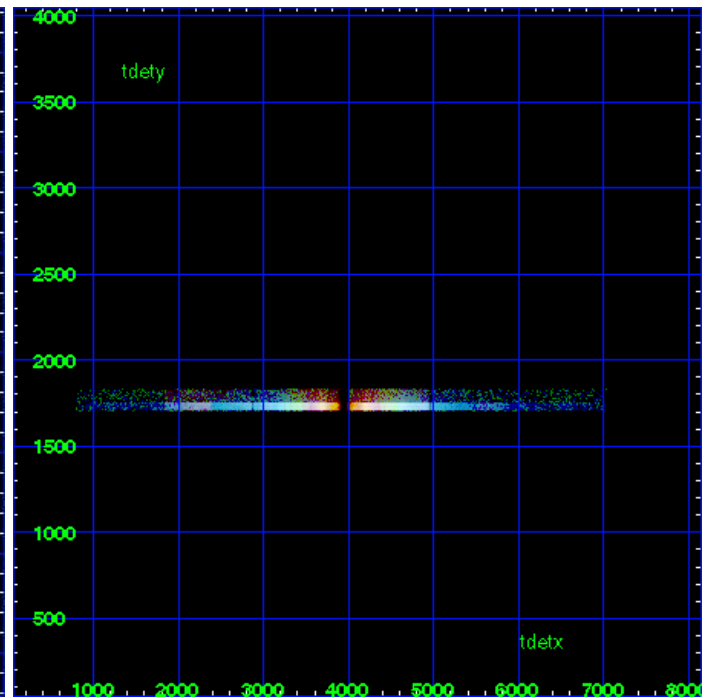
LETG Zero Order



LETG Order Sort ALL

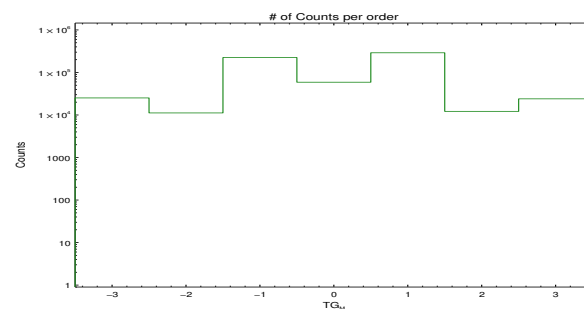


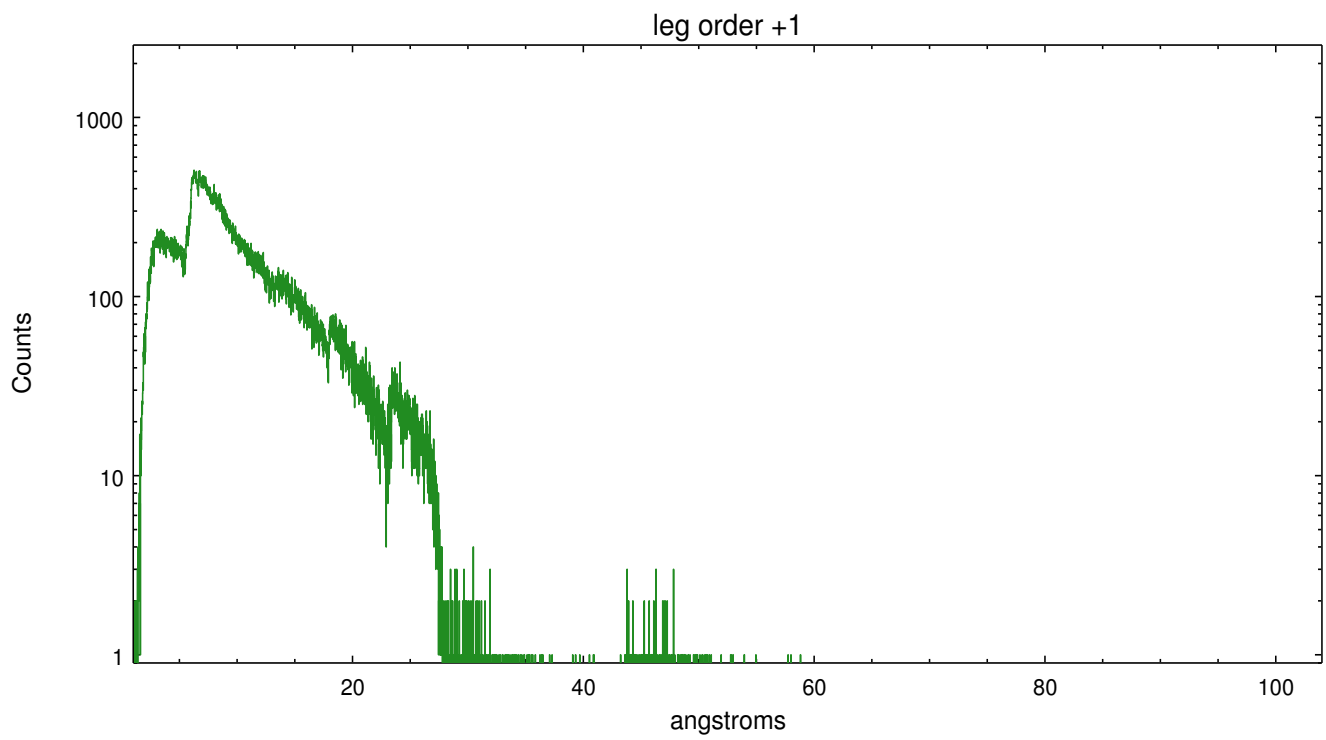
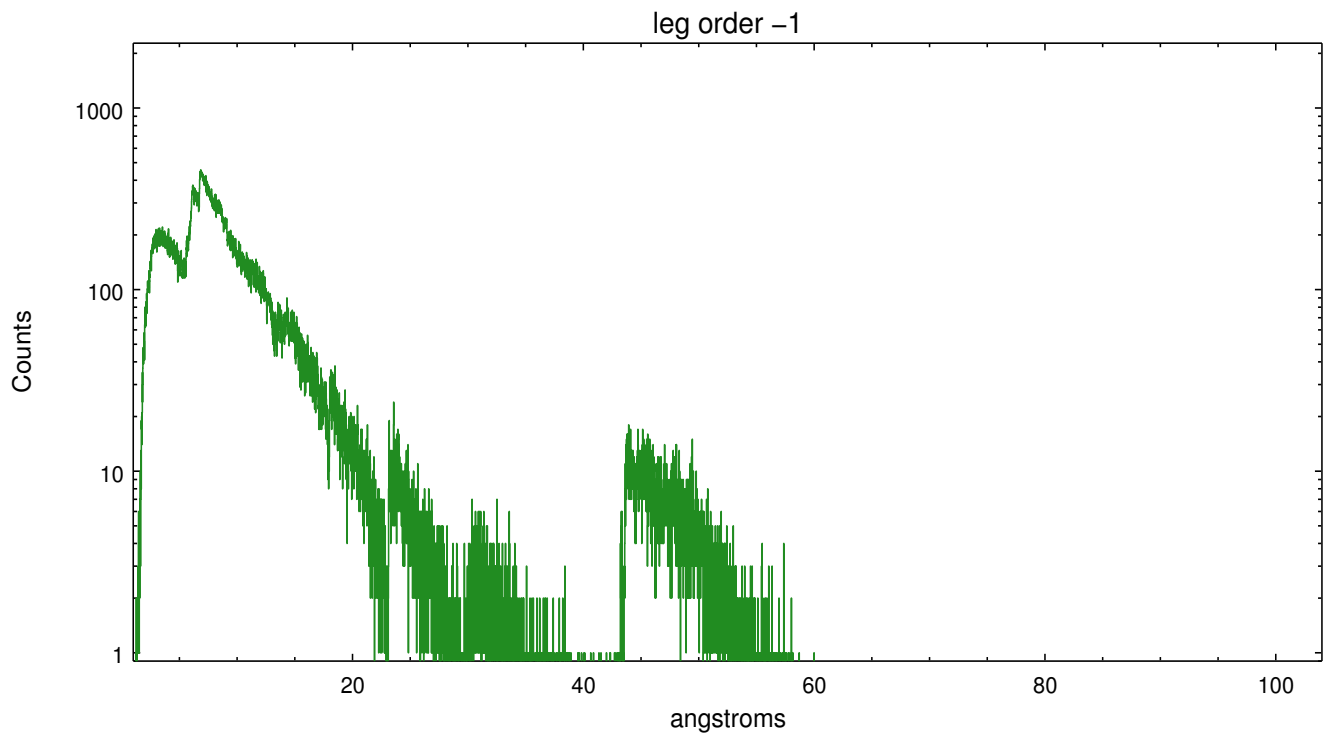
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	25194	11181	224109	58940	290415	12163	23989





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.06.26
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	28.959601150751

A.2 Comments

Zeroth order piled up. Standard data processing software did not correctly locate the zeroth order due to pileup. Manual intervention was used to input the correct sky coordinates (x=3981.85, y=4201.68) into the *src1a.fits file table. These corrected coordinates were determined using a software tool developed by CXC called findzero, which is expected to be released in CIAO (currently in ISIS). The tool calculates the point of intersection of the readout streak and the meg arm (preferred position), or the readout streak and the heg arm. The zeroth order source position determined by the standard pipeline processing using the tool tgdetect was not used in this processing. The newly determined zeroth order coordinates have been placed in the *src1a.fits file, replacing the coordinates determined by tgdetect. Note that these corrected coordinates of the zeroth order cannot be reproduced by running tgdetect on the data.

===

Gain and CTI correction are not well calibrated on CCD_ID 5 (ACIS-S1). Default order sorting can clip some regions, particularly longward of 30A (first order). User-specified custom processing parameters may be required in tg_resolve_events (osipfile=none, osort_lo, osort_hi ~0.5) though this can allow more zeroth order background at short wavelengths.